



NICK MACCHIONE, FACHE
DIRECTOR

WILMA J. WOOTEN, M.D., M.P.H.
PUBLIC HEALTH OFFICER

County of San Diego

HEALTH AND HUMAN SERVICES AGENCY

PUBLIC HEALTH SERVICES
HEALTH SERVICES COMPLEX

3851 ROSECRANS, SAN DIEGO, CALIFORNIA 92110
(619) 531-5800 FAX (619) 542-4186

Bruce E. Haynes, M.D.
Medical Director
Division of Emergency Medical Services
6255 Mission Gorge Road
San Diego, CA 92120-3599
(619) 285-6429 FAX:(619) 285-6531

Community Epidemiology
Emergency & Disaster Medical Services
HIV, STD and Hepatitis
Immunization
Maternal, Child and Family Health Services
Public Health Laboratory
PH Nursing/Border Health
TB Control & Refugee Health
Vital Records

Medical Director's Update for Base Station Physicians' Committee February, 2012

A Flu Season uptick has occurred over the last several weeks. Influenza is "widespread" in California. Our public health Influenza Watch reports a large jump in the last report. We seem to be experiencing a later flu season than usual. Most of the isolates are influenza A. A number of the EDs report they are busy, although surveillance shows it is within a typical time. There have been a lot of patients with fever.

Norovirus outbreaks have hit some residential care facilities and skilled nursing facilities. Please find a summary of information about norovirus below.

Drug shortages continue. Midazolam is predicted to be more available any time now (mid-February), although information on availability is not always certain during these shortages. There is availability of morphine, although in some cases in a different concentration. Our thanks to our local suppliers for their cooperation and assistance.

Intramuscular midazolam was compared to IV lorazepam in a New England Journal of Medicine article last week in the treatment of status epilepticus. Lorazepam is considered a first line treatment, while many EMS systems, like ours, use midazolam. The RAMPART study assigned 893 adults and children to a treatment group. The characteristics of the groups were well matched. The dose of midazolam was similar to what we use.

Seizures were absent without rescue therapy in 73% of the IM midazolam group vs 63% of the IV lorazepam group. The two treatment groups were similar in need for endotracheal intubation (14%), and recurrence of seizures, midazolam 11%, lorazepam 11%. Of patients randomized to IV treatment, 31 who didn't reach primary outcome never received the IV study medication because of failure to obtain vascular access. Only 5 patients in the entire intramuscular group did not receive IM owing to problems with IM autoinjector used. The time to administration of active treatment was shorter by

IM than IV, 1.2 vs 4.8 min, but termination of seizures occurred sooner after IV administration, 1.6 vs 3.3 min, so the overall interval until termination of convulsions was similar in the two treatment groups. For subjects in status epilepticus, intramuscular midazolam is at least as safe and effective as intravenous lorazepam for prehospital seizure cessation.

This study supports the use of intramuscular midazolam in status epilepticus.

Simple oxygen masks used in children should have a minimum oxygen flow rate of 5 L/min.

Careful patient assessment when spinal stabilization is applied is important to find any neurologic deficits. In addition, correct documentation reflecting the assessment is equally important. The assessment should document post-immobilization findings.

The County's first Advanced Emergency Medical Technician class is underway at EMSTA. We wish them success.

This is the year for limited changes in our protocols. The implementation of changes in data collection also limits the changes that could be made. There may be a limited number of changes.

The State EMS Authority recently took comments on limited revisions to the Advanced EMT and EMT regulations focused on consistency with national education standards and instructional guidelines, including length of courses and in some cases scope of practice. Advanced EMT would go from 88 hours to 160, and EMT from 120 to 160 hours.

Hospital training in decontamination procedures and hands-on use of personal protective equipment is being done by the County's Department of Environmental Health. Contact EMS if you have questions, or would like your facility to take part.

Pediatric surge training is underway. This class helps non-pediatric hospital prepare to respond to large numbers of pediatric patients when Children's may be unable to take all patients. It is two half days. Contact EMS for more information.

A Burn Surge program is under development. This would give non burn center hospitals the information and supplies to treat burn patients during a large scale burn event. It would facilitate triage of the most badly burned patients to the UCSD burn center, while less severely burned patients, but who need resuscitation and burn management could receive care at one of the trauma centers for several days until the point they need grafts. The moderately burned patients would go to 911 receiving hospitals as seems appropriate. You will hear more about this.

Recommendations for Control of Norovirus for EMS Responders

February 2012

Noroviruses, formerly referred to as “Norwalk-like viruses,” are common: the Centers for Disease Control and Prevention (CDC) estimates that more than 21 million cases of acute gastroenteritis each year in the United States are caused by norovirus infection. Noroviruses may be spread by person-to-person contact or by contact with contaminated surfaces, including door knobs and bathroom surfaces, or by ingestion of contaminated food. Norovirus outbreaks often peak in winter but do occur year round. There have been several recent outbreaks in local skilled nursing and other residential facilities. Similar outbreaks have been recognized in other California communities. There is no vaccine, nor long-term immunity for norovirus. The best protection is reducing the risk of infection.

Norovirus infection can cause acute gastroenteritis characterized by watery, non-bloody diarrhea, abdominal cramps, nausea and vomiting. Norovirus illness has an incubation period of 12 to 48 hours and duration of 12 to 60 hours. Young children, elderly persons, and hospitalized patients may be ill longer. Treatment of norovirus infection is supportive, consisting of maintenance of hydration and rest.

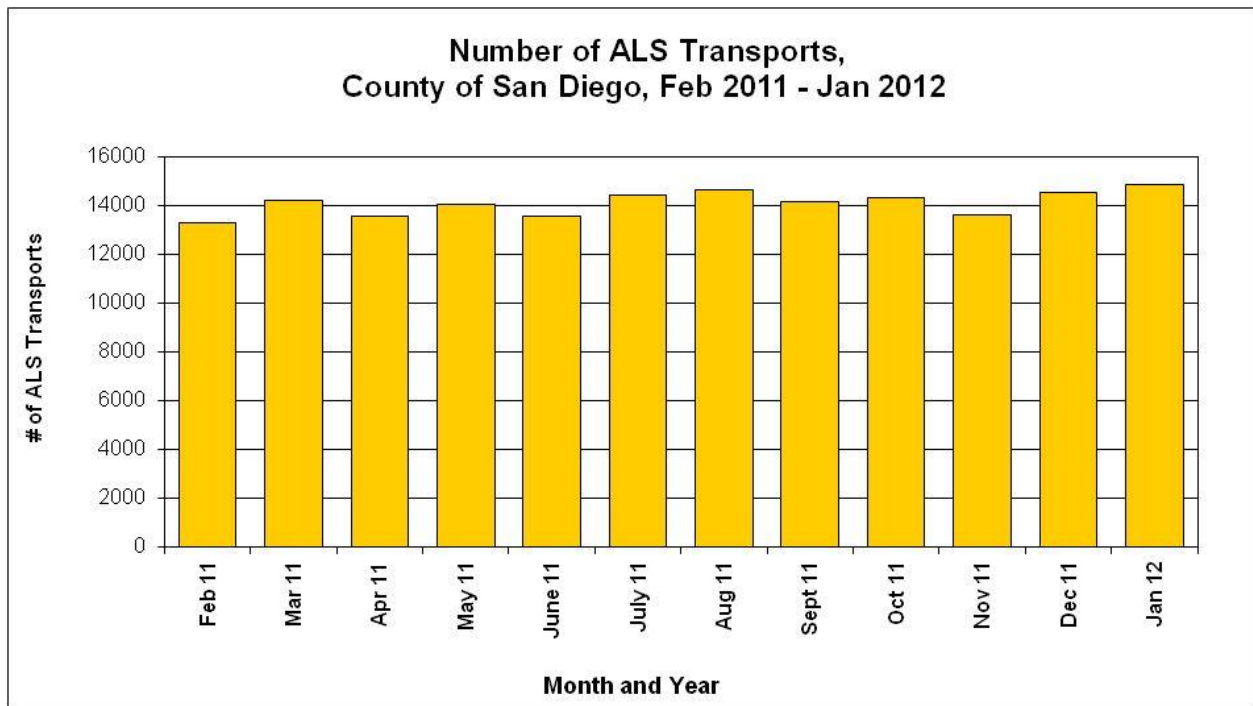
Noroviruses are spread primarily through contact with an infected person’s stool or emesis. As mentioned above, this may occur through direct person-to-person contact, through ingestion of contaminated food or water, or through contact with contaminated surfaces. There is no evidence of respiratory transmission; however, transmission may occur through aerosolization of emesis when particles of emesis contaminate surfaces or come into contact with mucous membranes and are swallowed. Transmission of norovirus is aided by the extreme hardiness of the virus in the environment, as well as its highly infectious nature. The infectious dose is believed to be as low as 10 viral particles, while approximately one million particles are excreted per milliliter of stool. Shedding usually occurs while the person is ill and for up to two weeks post-recovery. However, people infected with and shedding norovirus may be asymptomatic.

Specific recommendations for management of norovirus for EMS responders include:

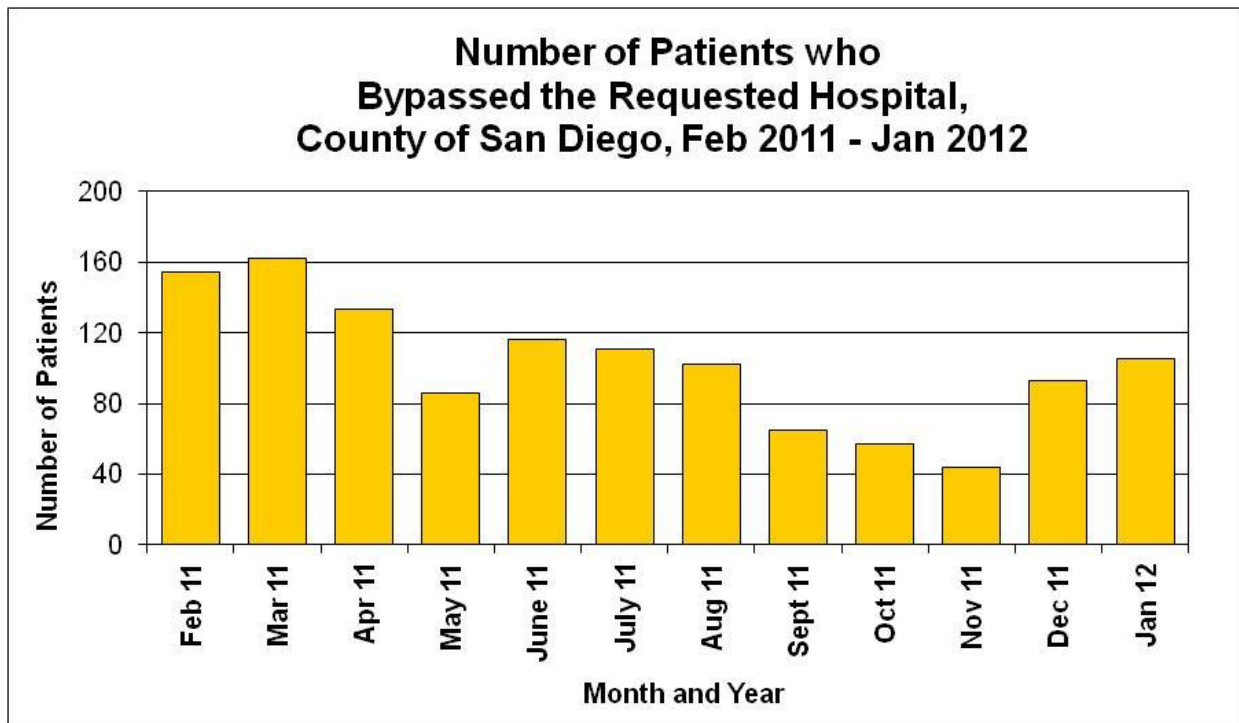
1. Contact precautions should always be observed by the responder when there is potential contact with body fluids that are not one’s own.
 - a. Gown and gloves should be worn when transporting patients.
 - b. In the presence of an actively vomiting patient, or when cleaning a heavily soiled area, the responder should wear a long-sleeved gown, gloves, and a surgical mask.
 - c. The responder should refrain from touching their own mucous membranes unless hands have been washed first.
2. Proper handwashing with soap and running water for at least 20 seconds is the most effective way to reduce norovirus contamination on the hands. Alcohol-based waterless hand rubs appear to be relatively ineffective against norovirus. If proper hand washing facilities are not available, remove debris from the hands with a disposable towelette, followed by use of a hand-sanitizing rub containing at least 70% ethanol. Hand washing should be performed before and after patient contact, and after glove removal, use of the restroom, and at the end of the shift. Bare arm

and any other skin that might have been exposed during a vomiting incident should also be cleaned in a similar fashion.

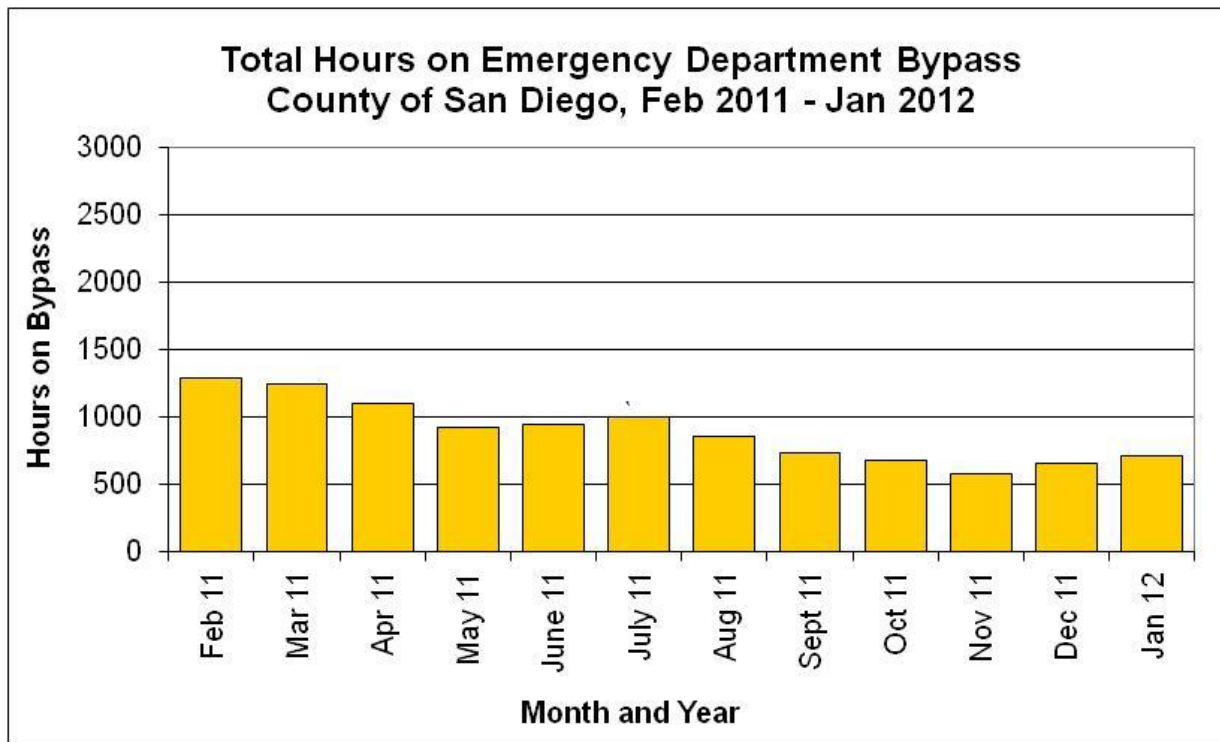
3. If the responder has been potentially contaminated by the emesis of a patient, the responder's outer clothing should be changed or covered with a disposable jumpsuit prior to further patient or environmental contact when possible.
4. If a patient has diarrhea, or especially if they have projectile vomiting while in the care of the responder, the following sanitation must be done BEFORE use of any exposed equipment for another call:
 - a. Wearing gown, gloves and a surgical mask, scrupulously clean up all vomitus and stool using disposable absorbent material and minimizing aerosols.
 - b. Following manufacturer's instructions for contact time, disinfect the entire area *within an 8-10 foot range of the vomiting incident* with a 1:10 dilution of fresh bleach or another product that has an Environmental Protection Agency (EPA) norovirus kill claim.
 - c. If disposable supplies (e.g., dressings) have been exposed they should be disposed in an appropriate receptacle. Non-disposable equipment such as gurney straps, BP cuffs, etc. should be cleaned and disinfected as instructed above.
 - d. Failure to be meticulous with cleanup may lead to norovirus remaining in the environment and subsequent employee or patient infections.
5. Report the patient's condition to the receiving facility.
6. EMS responders who experience symptoms of norovirus should not return to work until they are symptom-free (no diarrhea or vomiting) for at least 48 hours. Upon returning to work, they must practice scrupulous handwashing.



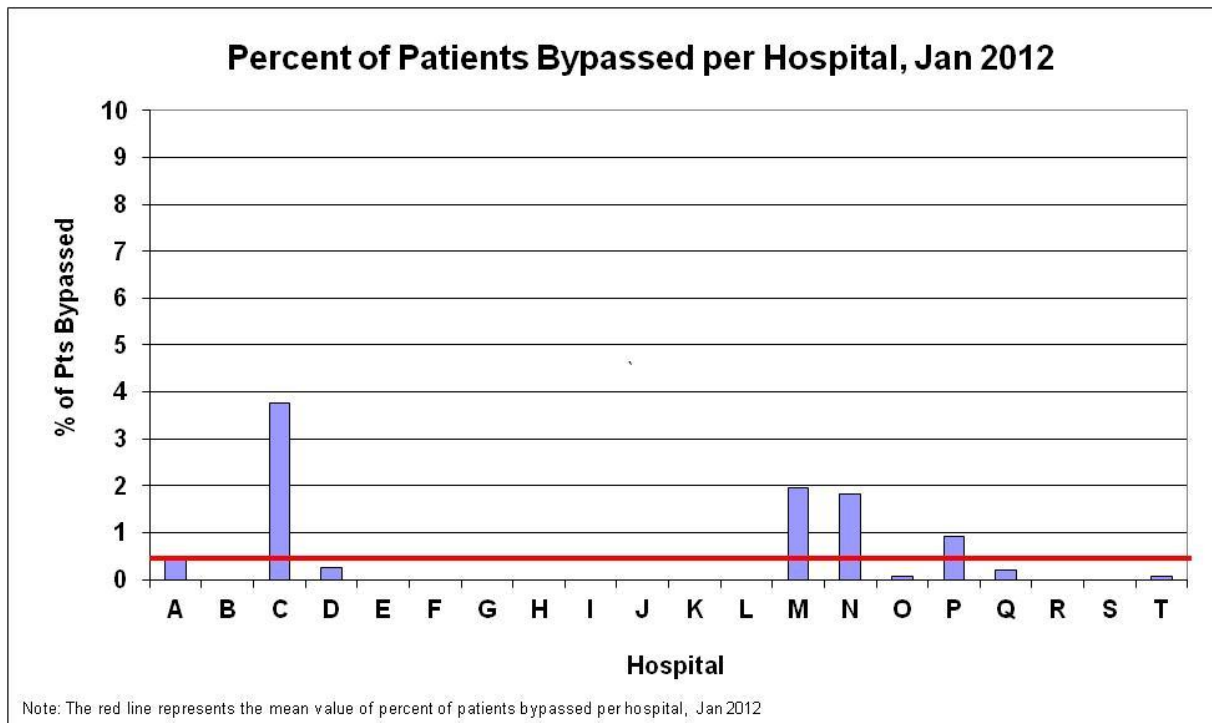
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Feb 2011 – Jan 2012 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other



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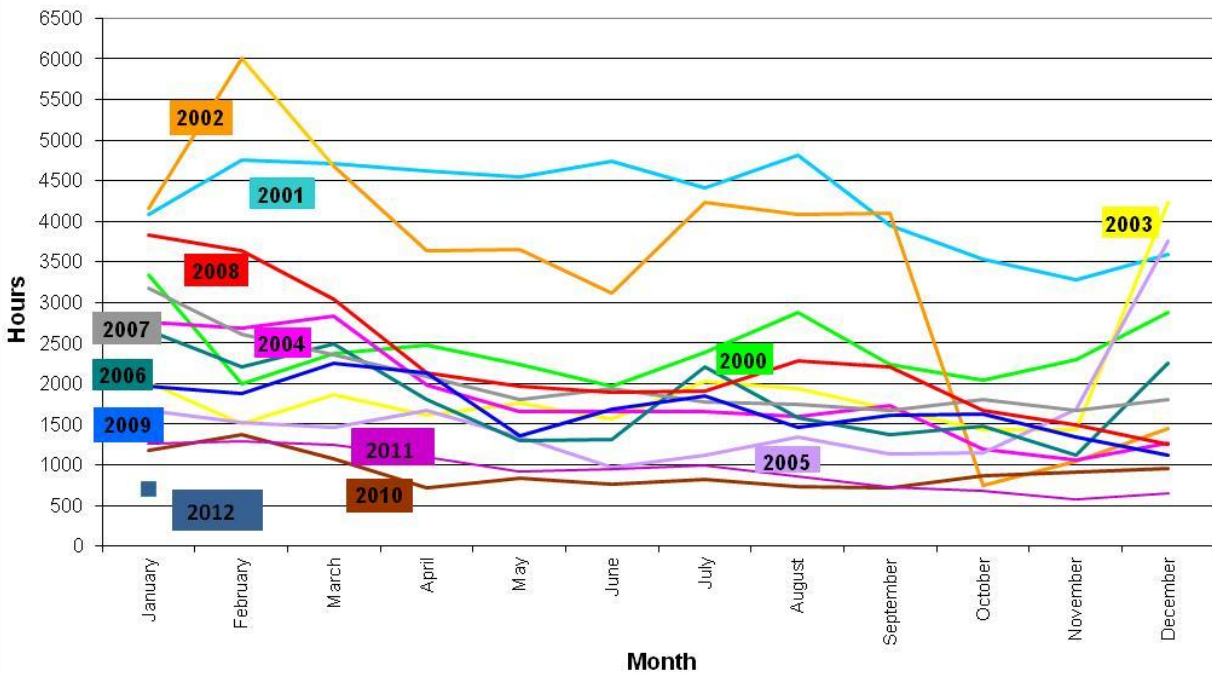


Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Feb 2011 – Jan 2012



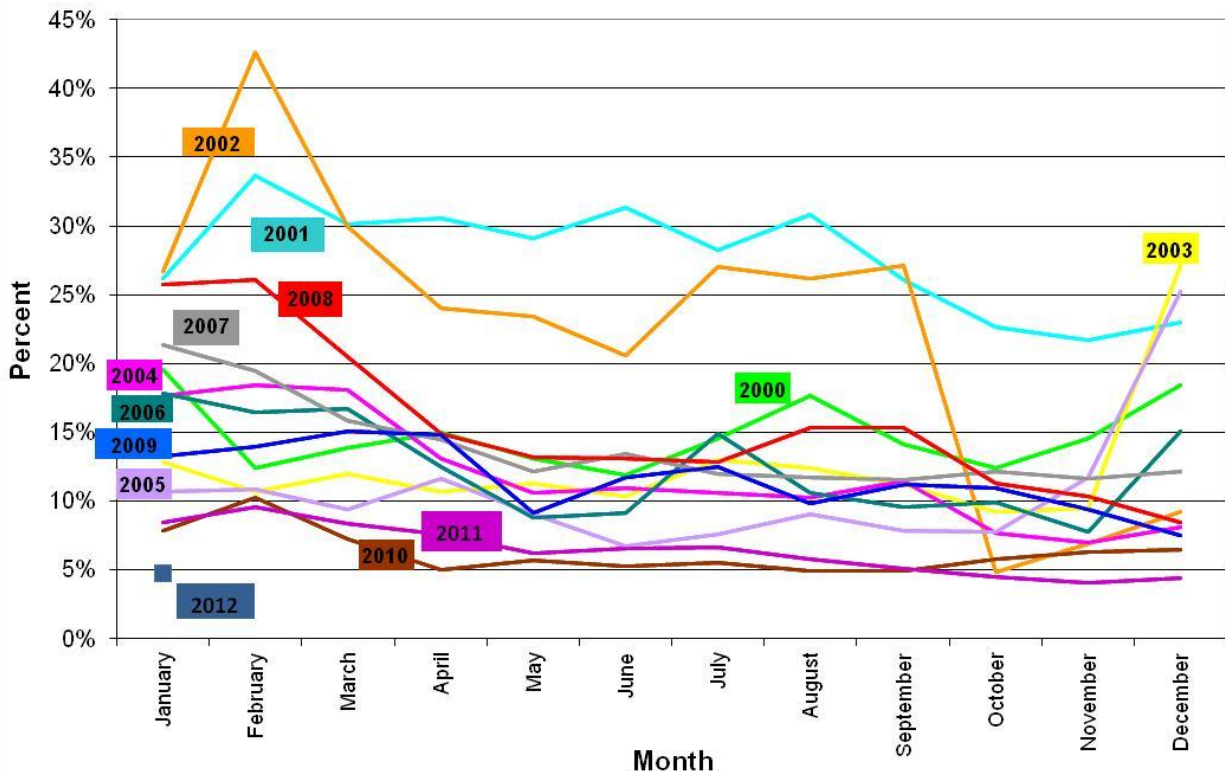
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Jan 2012
 Note: Numbers based on Run Outcomes of Transport by Unit and Transport by Other

Total Hours on ED Saturation by Month and Year, San Diego County, Jan 2000 - Jan 2012



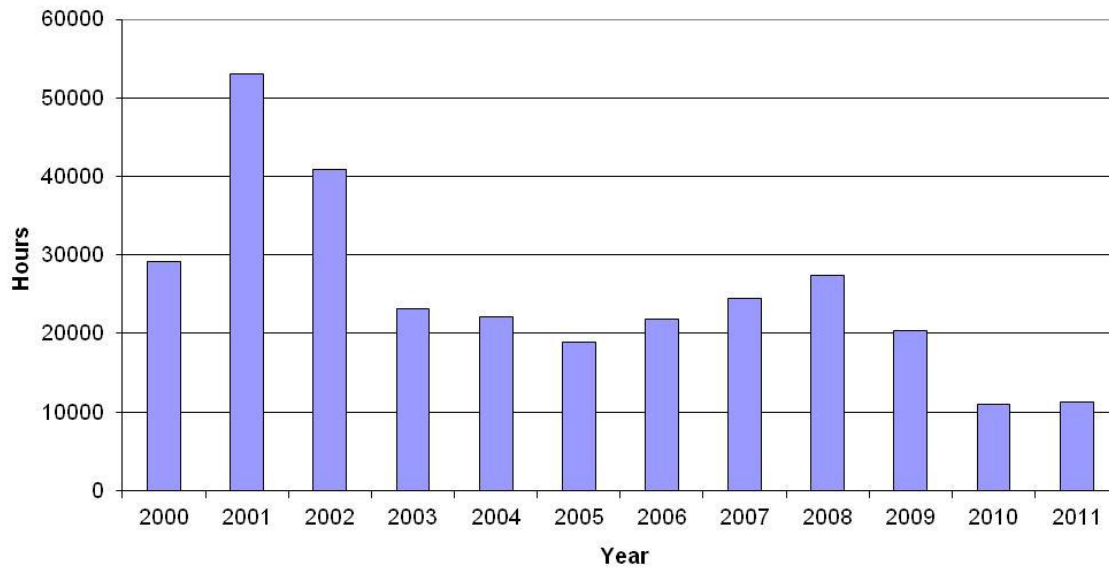
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Jan 2000 – Jan 2012

Overall Percent Hours on ED Sat Per Month San Diego County, Jan 2000 - Jan 2012



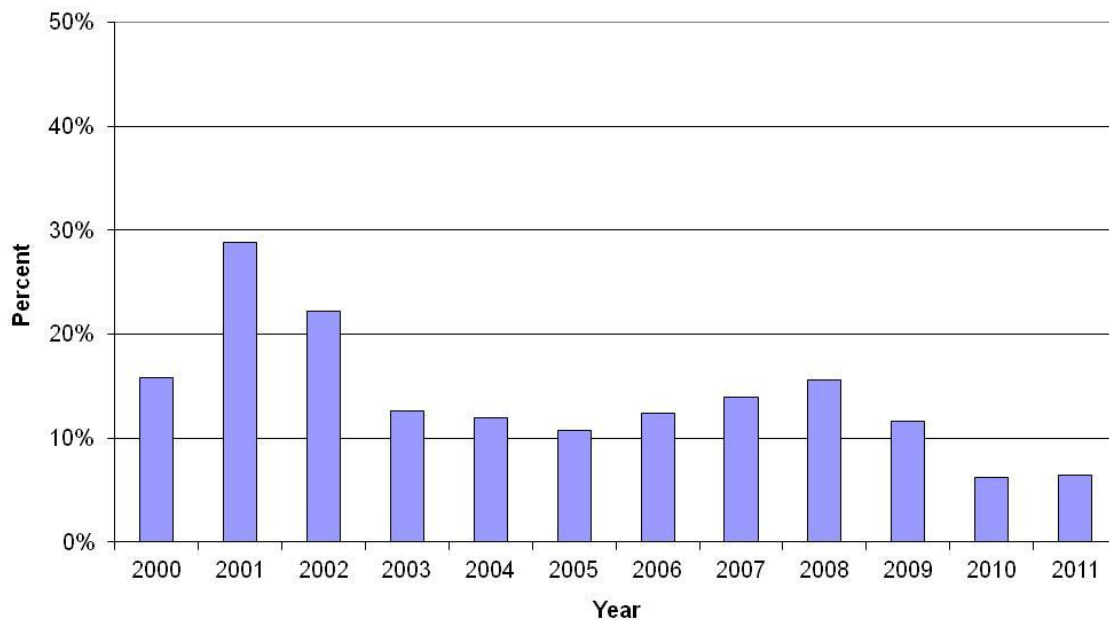
Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, Jan 2000 –Jan 2012

Total Hours on ED Saturation by Year, San Diego County, 2000-2011



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, 2000 – 2011

Overall Percent Hours on ED Saturation by Year, San Diego County, 2000-2011



Source: County of San Diego, Health and Human Services Agency, Emergency Medical Services, MICN Records, 2000 – 2011